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REPORT TO REGIONAL WATER SUPPLY COMMISSION MEETING OF WEDNESDAY, OCTOBER 21, 2020

SUBJECT 2019-2022 Water Service Planning

ISSUE SUMMARY

To provide the Regional Water Supply Commission with an overview of relevant initiatives undertaken by the Integrated Water Services department in 2020 and planned for 2021 to deliver on approved Board Priorities and the Corporate Plan.

BACKGROUND

The Capital Regional District (CRD) Board completed its strategic planning early in 2019 and approved the CRD Board Strategic Priorities 2019-2022.

The four priorities are:

1. Community Wellbeing – Transportation & Housing;
2. Climate Action & Environmental Stewardship;
3. First Nations Reconciliation; and
4. Advocacy, Governance & Accountability.

The priorities were confirmed at the annual check-in on May 13, 2020.

The 2019-2022 CRD Corporate Plan is aligned to the Board direction. It highlights the initiatives the CRD needs to deliver over the Board's four-year term to address the region's most important needs. The Corporate Plan identified six initiatives under Water, that fall under the mandate of the various water supply and distribution services.

Appendix A *Community Need Summary - Water 2021* is a summary of the planned activities for 2021. It contains details about core service levels, new initiatives proposed and performance metrics.

Appendix B *Water - Initiatives Progress Report* provides insights into what has been delivered through the initiatives related to the Water Community Need that included in the provisional budget last year, for delivery in 2020. Two of the initiatives (10a-7 Salt Spring Island and Southern Gulf Island Water Operations and 10d-4 SSI Watershed Protection) were approved through the Electoral Areas Community Need Summary as they directly addressed a local need.

The Service Planning process gathered information necessary to assemble a provisional budget for Committee and Board review. The purpose of this report is to explain how the Integrated Water Services divisional program of work connects to the Board Priorities, Corporate Plan and provisional budget.

ALTERNATIVES

Alternative 1

The Regional Water Supply Commission recommends to the Capital Regional District Board:

That Appendix A Community Need Summary - Water be approved as presented and advanced to the October 28, 2020 provisional budget review process.

Alternative 2

The Regional Water Supply Commission recommends to the Capital Regional District Board:

That Appendix A Community Need Summary - Water be approved as amended and advanced to the October 28, 2020 provisional budget review process.

IMPLICATIONS

Financial Implications

Initiatives identified in the Corporate Plan (including Board Priorities) cannot be undertaken without resourcing. The Board determines resourcing through its annual review and approval of financial plans. To support the Board's decision-making, staff, through the service planning process, provide recommendations on funding, timing and service levels.

During this years' service planning process, staff have been mindful of the fiscal challenges facing the region in the month ahead. To that end, any budget increase or other impacts have been mitigated, as much as possible.

Service Delivery Implications

The Community Need Summary provides an overview of all work that needs to be undertaken in order to meet our regulatory requirements, satisfy Board direction and meet the needs of the communities we serve.

Alignment with Board & Corporate Priorities

Staff have identified three initiatives that will have budget implications for 2021 (Table 1).

Table 1: Community Needs Summary - Water, Delivery Initiatives

| # | Initiative | Description | Year(s) | FTE impacts in 2021 | Budget Impacts in 2021 |
|---------|---------------------------------|--|-------------|---------------------|--------------------------------|
| 10a-0.1 | Watershed Security Position | Create new shift position to respond to security issues and wildfire risk. | 2021 | 1.0 ongoing | Included in provisional budget |
| 10a-2.1 | Water Infrastructure Resilience | Review infrastructure redundancy & improvements, renew/replace infrastructure to avoid infrastructure deficits & ensure reliable, safe service delivery & resilience | 2020 – 2021 | 1.0 ongoing | Included in provisional budget |
| 10d-3 | Watershed Hydrology Monitoring* | Expand and increase watershed hydrology monitoring in the Greater Victoria Water Supply Area | 2020 – 2021 | | Included in provisional budget |

* New – Initiatives not in the 2019-2022 Corporate Plan

Blue highlighted areas are initiatives that directly address a Board Priority.

Delivery Initiatives

10a-0.1 – Watershed Security Position

A core service of the Watershed Protection division is to conduct wildfire and security patrols. Historically, this function has been fulfilled by divisional staff volunteering for shifts and one regular position for which an alternative shift structure was negotiated in 2017 to include weekend patrols. However, year-on-year increases in trespassing and security incidents have made it challenging to ensure adequate watershed security and worker safety is maintained at all times. This initiative would address this challenge and ensure the core operational function of patrolling continues.

The initiative proposes to create one new ongoing position in the division with a focus on security and wildfire (including weekend patrols). This will help ensure an active field security presence seven days a week. The estimated cost of the position in 2021 will be partially offset by a reduction in auxiliary costs which will no longer be required. Recruitment is expected to be complete by Q2 2021.

10a-2.1 – Water Infrastructure Resilience

A combination of system expansion in the Juan de Fuca (JdF) Water Distribution System and aging water infrastructure in JdF and the Regional Water Supply (RWS) system are driving demand for an increase in resources.

The initiative proposes to create one new ongoing position in the Infrastructure Operations division to ensure the continued safe and effective delivery of potable water going forward and to

meet the regulatory requirements related to dam safety. Increasing capacity in the division will also help reduce the risk of higher capital costs in future by facilitating the completion of annual maintenance and inspections for the 14 dams in the RWS.

The cost of the position in 2021 is included in the provisional budgets and will be cost shared between all of the large water services. Recruitment is expected to be completed by Q1 2021.

10d-3 – Watershed Hydrology Monitoring*

There is hydrological and meteorological (hydromet) monitoring in place for the Sooke and Goldstream Water Supply Areas. We also have newly installed instrumentation at Leech Water Supply Area. This equipment is critical to monitor and respond to questions about current and future water quality and supply.

Hydromet monitoring supports the Climate Action & Environmental Stewardship Board Priority by monitoring the environment of the Greater Victoria Water Supply Area and detecting trends and events related to climate and environmental variables (e.g. climate change, forest change, wildfires).

This initiative is to procure the services of a specialist contractor to support the ongoing installation, modification and maintenance of hydromet instruments and collect, quality assure and analyse the data to support hydrological model development and upgrade. The cost for the service contract in 2021 is included in the provisional budget, and is to be renewed annually. The contract was funded through a new single supplementary budget request in 2020.

CONCLUSION

Staff have been progressing initiatives and actions identified in the Corporate Plan, including Board Priorities. The Board determines resourcing through its annual review and approval of financial plans. As per previous years, to support the Board’s decision-making, staff are providing recommendations on funding, timing and service levels through the service and financial planning processes.

RECOMMENDATION

The Regional Water Supply Commission recommends to the Capital Regional District Board:

That Appendix A Community Need Summary - Water be approved as presented and advanced to the October 28, 2020 provisional budget review process.

| | |
|---------------|---|
| Submitted by: | Ted Robbins, B. Sc., C. Tech., General Manager, Integrated Water Services |
| Concurrence: | Robert Lapham, MCIP, RPP, Chief Administrative Officer |

ATTACHMENTS

- Appendix A: Community Need Summary - Water
- Appendix B: Initiatives Progress Report - Water

Water

Strategy

Target Outcome

We envisage a sustainable and resilient water supply

Strategic Context

Strategies

- [Regional Water Supply Strategic Plan](#)
- [Regional Growth Strategy](#)
- [Special Task Force on First Nations Relations](#)
- [Statement of Reconciliation](#)

Trends, risks and issues

- **Security and patrols:** there have been an increased number of security incursions/recreational pressure into the Greater Victoria Water Supply Area (GVWSA) from Sooke Hills Wilderness Regional Park and from the rapidly developing residential area around Langford and Goldstream. This is putting additional pressure on the Watershed team.
- **Climate Action:** the most significant risks for water services relate to climate and environmental changes. Predicted trends of drier, hotter summers will impact the water services in a number of ways:
 - Demand for water, including for local agricultural activities, will continue to increase which will in turn increase the risk of water shortages; addressing this challenge will require a continued focus on water conservation effort, watershed protection, ongoing monitoring and awareness of the need for good governance of the water service
 - Water quality may be affected due to increased biological growth in the source water and distribution system; expecting to see increasing pressure to include filtration as a step in the RWS treatment process
 - In the GVWSA, increasing periods of elevated wildfire risk, peak flows from winter storms, drought stress on trees which could lead to increased mortality and forest pests/diseases
 - Increased risk of power outages
- **Infrastructure Vulnerability, resiliency, and Emergency Preparedness:** we are seeing increases in operation and maintenance demand from a growing region combined with aging infrastructure. An

2021 Summary

updated Water Management Plan for water supply will identify a strategy to address supply (quantity) and critical delivery infrastructure (redundancy) needs

Services

| Core Services Levels | |
|---|---|
| Service | Levels |
| Regional Water Supply (RWS), Juan de Fuca (JdF) Water Distribution, Saanich Peninsula Water and Small Water Systems in the Electoral Areas Wholesale water supply to the 370,000 consumers in Greater Victoria and residents in three municipalities on the Saanich Peninsula, water distribution system within Langford, Sooke, View Royal, Colwood, East Sooke, Metchosin and Highlands and the small water systems in the Electoral Areas supported through following key service areas: | |
| Water Systems Operations and Maintenance Water treatment, supply and distribution system operation and monitoring. System and facility maintenance, consumables management and preventative maintenance | <ul style="list-style-type: none"> • Water treatment • Supply and distribution system operation • System monitoring • Customer service • System and facility maintenance • Consumables management • Component preventative maintenance |
| Emergency Response/System Failure Water main breaks | <ul style="list-style-type: none"> • 24/7 emergency response to water main breaks and other system emergencies |
| Infrastructure Planning Strategic asset management for all services/systems including modeling and capacity analysis, | <ul style="list-style-type: none"> • Asset management and capital planning • Adjust plans for 15 water services • System expansion and growth planning |

Community Need



2021 Summary

| | |
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| <p>vulnerability assessment, infrastructure renewal plans.</p> | |
| <p>Capital Project Delivery and Works Project design, procurement and delivery of capital projects annually on time/budget. Main installations, dam upgrades, equipment replacement and capital projects support</p> | <ul style="list-style-type: none"> • Capital program delivery • Water main installations and equipment replacement • Dam maintenance and upgrade projects • Capital project support |
| <p>Engineering Services Development referrals, survey and mapping, engineering support to utility operations, and dam safety inspections and administration.</p> | <ul style="list-style-type: none"> • Engineering support of utility operations for the 15 water services. |
| <p>Watershed Protection Forest land management of the 20,550 hectares of the Greater Victoria Water Supply Area to ensure high-quality source drinking water for the Regional Water Supply System through following service areas:</p> | |
| <p>Wildfire, Security & Emergency Response: Watershed security, and wildfire and spill preparedness, prevention and response</p> | <ul style="list-style-type: none"> • 24/7 watershed emergency duty officer standby • Security/wildfire patrols (weekends and holidays; daily during elevated fire conditions) • Wildfire detection air patrol during high and extreme fire hazard |
| <p>Watershed Operations Silviculture, forest health and forest fuel management; invasive plant management; vegetation management and road maintenance, upgrades and rehabilitation</p> | <ul style="list-style-type: none"> • Winter/summer road maintenance • Culvert and bridge upgrades to accommodate higher peak flows to higher standards and changing climate • Fuel management treatment and fire smarting maintenance • Brushing around facilities, dams, for tree release • Danger tree assessment and removal along roads and powerlines • Invasive plant management |
| <p>Resource Planning Wildlife management, ecological inventories and analyses, risk assessment and management, and GIS and data management</p> | <ul style="list-style-type: none"> • Development of a comprehensive hydrology monitoring program • Annual forest health survey • Partnering in climate change and other research in the GVWSA |

Community Need



2021 Summary

| | |
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| | <ul style="list-style-type: none"> • Management of beaver, Canada geese and bullfrogs • Public tours of the Water Supply Area and facilities |
| Environmental Protection Regulatory and non-regulatory services and a support role across the organization that focuses on enhanced integration of drinking water quality protection programs and integration of communication initiatives. | |
| Water Quality Monitoring, assessment, reporting and technical advice to meet water quality regulatory requirements | <ul style="list-style-type: none"> • Source water and distribution system monitoring, assessment and reporting • Physical, chemical and biological analytical services, assessment and reporting |
| Demand Management Research and data to inform capital planning, water conservation, and communications and education | <ul style="list-style-type: none"> • Accurate data • Per capita targets (residential and ICI) |
| Cross Connection Control Oversight, monitoring and reporting of potential sources of contamination that may flow in a reverse direction into the Regional Water Supply | <ul style="list-style-type: none"> • Contamination prevention through facility inspections, testing and education for backflow prevention devices • Monitor and track (>28,000) backflow prevention devices |
| Communications & Environmental Education Public education and engagement in the region to promote sustainable behavior through campaigns, initiatives and services | <ul style="list-style-type: none"> • Increased public awareness of CRD messages and subsequent behavior changes (declining trend in per capita and per sector water use) |
| Support Services | |
| Support Services The core services listed rely on the support of several corporate and support divisions to effectively operate on a daily basis. These services are reported on in the Accountability Community Need Summary. | <ul style="list-style-type: none"> • Services include Human Resources & Corporate Safety, Corporate Communications, Asset Management, Financial Services, Information Technology & GIS, Information Services, Legislative Services, Facility Management, Fleet Management, Legal Services, Risk & Insurance and Real Estate Services. |

Community Need



2021 Summary

| Initiatives | | | | | |
|-------------|---|--|-----------|---|--------------------------|
| Ref | Initiative | Description | Year(s) | Status | 2021 impacts |
| 10a-1 | Post-Disaster Water Supply Plan | Implement approved Post-Disaster Water Supply Plan, including undertaking seismic resiliency study of critical water supply infrastructure | 2020-2022 | In progress (5 resilient supply hydrants installed by year end 2020; 5 hydrants installed and distribution trailers acquired in 2019) | |
| 10a-3 | RWSSP Update | Update Regional Water Supply Strategic Plan | 2022-2023 | In progress (progress report in Oct 2020) | |
| 10d-1 | Future Water Supply + Infrastructure | Conduct population & land use studies & estimate growth-related water demand & future water supply & infrastructure needs | 2020-2022 | In progress (50% complete) | |
| 10a-4 | Cross Connection Control (CCC) Inspector* | CCC Program: convert a current temporary CCC Inspector position to permanent to meet the requirements by Island Health and protect the public health | 2021 | Completed | 1.0 ^{Converted} |
| 10d-2 | Leech River Water Quality Operations* | Water Quality Operations Program: This multi-year initiative is to collect and analyze water quality data from the Leech River Watershed, the future water supply for the Greater Victoria Drinking Water System | 2021 | In progress (Field sampling began in 2020 and will continue for approximately five years) | 0.4 ^{Ongoing} |

Community Need



2021 Summary

| Initiatives | | | | | |
|-------------|---------------------------------|--|-----------|---------------------------------|--------------|
| Ref | Initiative | Description | Year(s) | Status | 2021 impacts |
| 10a-0.1 | Watershed Security Position | Create new shift position to respond to security issues and wildfire. | 2021 | NEW | 1.0 ongoing |
| 10a-2.1 | Water Infrastructure Resilience | Review infrastructure redundancy & improvements, renew/replace infrastructure to avoid infrastructure deficits & ensure reliable, safe service delivery & resilience | 2020-2021 | NEW additional request for 2021 | 1.0 ongoing |
| 10d-3 | Watershed Hydrology Monitoring* | Expand and increase watershed hydrology monitoring in the Greater Victoria Water Supply Area | 2020-2021 | NEW additional request for 2021 | |

*New – Initiatives not in the 2019-2022 Corporate Plan

Initiative approved in prior years which have now been delivered or absorbed in Core Services:

- 10a-5 – Water Billing
- 10a-7 – Salt Spring Island + Southern Gulf Islands Water Operations
- 10b-1 – Water Conservation through Demand Management
- 10c-1 – Agricultural Water Subsidy
- 10d-4 – SSI Watershed Protection

Business Model

Funding

Who contributes

Water Supply and Distribution:

- Regional Water Supply: All Municipalities, JDF EA, First Nations (via Distribution Systems)
- Saanich Peninsula Water Supply: Municipalities (Central Saanich, North Saanich, Sidney)
- JDF Water Distribution: Langford, Colwood, View Royal, Metchosin, Highlands, Sooke, JDF EA
- Local Water Service Areas in the Electoral Areas

Environmental Protection

- Water Quality Service: Allocation from Integrated Water Services and Local Service Areas (LSA) from municipalities of RWS area, JDF and various local service areas, Sidney, North Saanich, Central Saanich and Peninsula First Nations
- Demand Management, Cross Connection Control Services: water rate from all Municipalities and Electoral Areas
- Communications and Environmental Education: all Municipalities and Electoral Areas

Support Services

- Varies per service

Funding Sources

- **Regional Water Supply:** Bulk water sales revenue
- JdF Water Distribution System: Retail water sales revenue in West Shore Municipalities
- **Saanich Peninsula Water:** Wholesale water sales revenue
- **Environmental Protection services:** water rate and requisition

Reporting Structure

[Regional Water Supply Commission](#) – [Water Advisory Committee](#) – [Saanich Peninsula Water Commission](#) – [JDF Water Distribution Commission](#)

– [Various LSA Commissions](#) (Port Renfrew, Lyall Harbour/Boot Cove, Magic Lake Estates, Skana, Beddis, Cedar Lane, Cedars of Tuam, Fernwood, Fulford, Highland, Sticks Allison, Surfside Park, Wilderness Mountain)

Community Need Key Performance Indicator (KPI)

Discussion

Link to Target Outcome

The following KPIs link to the CRD's goals of safe, sustainable and resilient water resources for the Capital Region. These KPIs are being established with new performance targets that will be reported in future service plans.

- Compliance with Island Health, provincial and federal regulatory requirements and operational certificates
- Water quality samples analyzed from source reservoirs (raw water) and transmission/distribution systems (treated water)
- Peak day per capita water use and average day per capita water use
- Operating cost per megaliter of drinking water treated and supplied/distributed
- Energy use per megalitre of drinking water treated and supplied/distributed
- Delivery of annual capital program
- Volume of raw water released from RWS watersheds to rivers to support fish habitat
- Number of water quality complaints
- Number of leak repairs annually per kilometer of pipe (distribution systems)
- Number of water main failures annually per kilometer of pipe (distribution systems)

Water

| Initiatives approved in 2020 Budget | | |
|-------------------------------------|--|--|
| Ref | Initiative | Progress to date |
| 10a-1 | Post-Disaster Water Supply Plan | Progressing – Continued implementation of resilient infrastructure including hardened hydrants and restrained pipe, as well as acquisition of emergency distribution supplies. Additional education and coordination with municipal distributors and emergency services planned for 2021 |
| 10a-2 | Water Infrastructure Resilience | Progressing – Infrastructure renewal programs continue with appropriate funding levels; recruitment of new staffing approved in 2020 complete |
| 10a-3 | RWSSP Update | Progressing – making progress on strategic plan initiatives; progress report will be presented to RWSC in October 2020 |
| 10a-4 | Cross Connection Control Inspector * | Part of core service – position converted from term to ongoing, continues to be part of day-to-day operations |
| 10a-5 | Water Billing * | Progressing – recruitment of new staff underway |
| 10a-7 | SSI + SGI Water Operations * | On-going - Core service delivery |
| 10b-1 | Water Conservation through Demand Management | Part of core service - updated Water Conservation Bylaw in 2020. Demand Management work progressing – per capita demand rates being developed for each sector. |
| 10c-1 | Agricultural Water Subsidy | Agricultural land use inventory and agricultural water demand model completed and presented to Commissions in 2020. Agricultural water rate review will be completed in 2021. |
| 10d-1 | Future Water Supply + Infrastructure | Regional Water Master Plan Update will be completed in 2021 with a focus on long term water supply and infrastructure. |
| 10d-2 | Leech River Water Quality Operations * | Progressing – sampling underway |
| 10d-3 | Watershed Monitoring* | Progressing – Hydromet station maintenance, upgrade and discharge measurement contracts have been executed, work is in progress. |

Community Need



Initiative Progress Report

| Initiatives approved in 2020 Budget | | |
|-------------------------------------|----------------------------|---|
| Ref | Initiative | Progress to date |
| 10d-4 | SSI Watershed Protection * | Progressing – Subject to the recommendations from the water optimization study examining challenges in operating multiple water distribution and treatment systems on an unincorporated island electoral area. |

* New - Initiatives not in the 2019-2022 Corporate Plan